TOP SECRET
OXCART/IDEALIST

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NRO REVIEW COMPLETED

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19 JUL 1968

MEMORANDUM FOR: Director, CIA Reconnaissance Programs

SUBJECT: Program Progress Report

Forwarded herewith are Program Progress Reports (5 copies each) for OXCART and IDEALIST for the period 1 April 1968 - 30 June 1968.
1 January 1969 - 31 March 1969

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[redacted]
DONALD H. ROSS
Colonel USAF
Director of Special Activities

Attachments
As stated [redacted]

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GROUP 1
Excluded from automatic downgrading and declassification

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SAS/O/OSA/[redacted] (15 July 1968)
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Section 1

OXCART

DEVELOPMENT SUMMARY AND PROGRESS

(1 April 1968 - 30 June 1968)

I. AIRFRAME

Due to SCOPE COTTON decision 20 (Phase-out 30 June 1968), no developmental actions were completed during the period of this report.

II. PROPULSION

Due to SCOPE COTTON decision 20 (Phase-out 30 June 1968), no developmental actions were completed during the period of this report.

III. PAYLOAD

a. Sensors - During the period from 1 April 1968 to 28 May 1968 (date of last camera configuration flight) a total of 19 photographic missions were flown.

1. Type I - Fifteen (15) camera flights were accomplished. One (1) was an operational mission, [redacted] It was successful as were the fourteen (14) non-operational missions.

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2. Type IV - Four (4) missions, all non-operational, were completed and were successful.

3. Other accomplishments during the reporting period were:

(a) Type I altitude calibration tests were completed.

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(b) The second phase of the low sun angle tests relating to Type I exposures were completed.

(c) Validation flights for Type I(H) were completed. Contractor analysis of data indicated it would have been considered operationally ready.

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(e) Type IV (SN-3) had two good validation flights. Contractor analysis of material indicates this configuration would have been declared operationally ready.

IV. AIRCRAFT FLIGHT TEST AND OPERATIONAL TRAINING SUMMARY (FINAL REPORT)*

(APRIL, MAY, JUNE 1968)

ACFT	FLIGHTS A.M.J.	TIME A.M.J.	TOTAL FLIGHTS	TOTAL TIME
121	3	3:37	322	418:00
122	-	-	162	177:51
123	-	-	78	136:10
124	16	25:10	614	1076:25
125	-	-	203	334:55
126	-	-	104	169:16

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ACFT	FLIGHTS A.M.J.	TIME A.M.J.	TOTAL FLIGHTS	TOTAL TIME
127	11	23:05	261	499:10
128	5	9:15	232	453:00
129	8	15:45	269	409:55
130	11	24:55	217	406:10
131	15	28:20	183	351:00
132	12	24:40	197	369:55
133	-	-	9	8:17
TOTALS	81	154:47	2851	4810:04

*Includes Ferry Flights and operational missions

V. LIFE SUPPORT

Due to SCOPE COTTON decision 20 (Phase-out 30 June 1968), no developmental actions were completed during the period of this report.

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OXCART

OPERATIONAL SUMMARY AND PROGRESS

(1 April 1968 - 30 June 1968)

I. Overflight Summary (PINWHEEL):

One A-12 overflight mission was flown during this period. This mission launched from and recovered to Kadena Air Base, Okinawa. Following is a brief resume of the mission:

25X1D a. [redacted] against North Korea 25X1D
targets of interest. Two passes were accomplished with total flight time of 4:06.

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25X1D [redacted] A total of 15 SAM sites covered; 3 occupied, 1 unoccupied, and 11 identification only. Overall photographic quality for the southern two-fifths of North Korea was fair to poor. Quality degradation was
25X1D primarily due to haze and scattered clouds which affected approximately 50% of the photography. This was the final BLACK SHIELD operational mission.

[redacted]

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[redacted]

III. Redeployment of OXCART Aircraft and Deployed Task Force:

a. Redeployment of OXCART from Kadena began when aircraft 131 departed Kadena on 8 June 1968. This aircraft made a precautionary landing at Wake Island due to a fuel leak in the right engine which was noted by the tanker crew during aerial refueling. On 14 June 1968 aircraft 131 departed Wake Island on a subsonic flight to Hickam, subsequently departed Hickam on 19 June 1968 and was flown supersonic [redacted]. The second A-12 aircraft departed Kadena at 2009Z on 9 June 1968 and landed [redacted] without incident on 10 June 1968 at 0138Z. The average speed for this flight was [redacted] with flight duration of 5:29Hrs.

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b. The OXCART deployed task force has completed redeployment from Kadena AB [redacted]

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IV. PILOT AND A-12 AIRCRAFT LOCATIONS (As of 30 June 1968)

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Pilots A-12 Aircraft	[redacted]	Palmdale, California (storage) 8*

*Includes one trainer (#124), two flight test (#121 and #122), and five operational aircraft ((#127, #128, #130, #131, #132)

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Section 1

IDEALIST

DEVELOPMENT SUMMARY AND PROGRESS

(1 April 1968 - 30 June 1968)

I. AIRFRAME

a. A U-2R flight manual meeting was held at Edwards AFB. Representatives of LAC, Customer One, Customer Two, and the Detachments were in attendance. Various format proposals for the Flight Manual performance charts were reviewed. LAC was tasked to prepare suggested sample charts based on the various inputs of the attendees. These charts were received in Headquarters on 25 June 1968 and will be reviewed prior to the next reporting period.

b. A U-2R technical meeting was held at LAC, Burbank, to review (a) the progress of the development flight test program, (b) the status of various problems, (c) the production aircraft delivery status, and (d) the proposed follow-on program. A detailed report [redacted] has been written summarizing the significant results of this meeting. 25X1A

c. U-2R FLIGHT TEST AND OPERATIONAL TRAINING SUMMARY (Thru 30 June 1968)

	A.M.J. FLTS	TIME A.M.J.	TOTAL FLTS	TOTAL TIME
1 - 051	18	59.3	68	220.9
2 - 052	12	51.8	30	109.0
3 - 053	29	81.7	36	94.6
4 - 054	19	72.0	21	73.2
5 - 055	14	35.5	14	35.5
6 - 056	13	33.0	13	33.0
TOTAL	105	333.3	182	566.2

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II. PROPULSION

a. The unaxisymmetric thrust and noise problems encountered with the ejector type tailpipe on the U-2R have now been resolved. The final fix to the problem involved use of a 13½" cylindrical extension to the previous Bill of Material tailpipe. A set of free floating segmented annular bypass doors at the engine face were also utilized. These doors close to prevent the engine compressor from drawing air away from the ejector on the ground when the nacelle pressure is higher than that at the engine face. The doors then open in flight when the engine face pressure is higher than nacelle pressure to provide cooling airflow to the nacelle and secondary airflow to the ejector.

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b. Small scale (3 inch diameter) model tests conducted at Pratt and Whitney Aircraft [redacted]

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[redacted] have also shown that the 13.5 inch tailpipe extension passes 2½ times more secondary (cooling) air at altitude and is more aerodynamically stable than the previous Bill of Material design. The 13.5" extension should theoretically cause a slight loss in altitude thrust due to reduced ejector wall static pressures. This thrust loss was not verified by flight test results.

c. A problem involving engine oil pressure fluctuations on some U-2R engine installations has developed. Tests are continuing on the Number One Article with a so-called constant rise oil pump which eliminates the feature on the variable rise Bill of Material pump which adjusts the discharge pressure of the oil boost pump to maintain a constant inlet pressure to the main oil pump. This change requires a careful manual adjustment of the boost pump discharge pressure on the ground which may create problems in use of this system in the field. Pratt & Whitney Engineering is analyzing the problem to determine if the problem can be eliminated on the Bill of Material pump by changes to the designs of pressure regulating valves, or by perhaps incorporating features of the constant rise pump in the Bill of Material pump.

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III. PAYLOAD

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a. Functional checks and flight tests were conducted with the B, Delta III, [redacted] systems in the U-2R vehicles during this reporting period. While no major problems were encountered that would require vehicle or configuration rework, some adjustments have yet to be made in mounting provisions and temperature control to afford peak performance from the sensor systems. Functional checks and flight tests of the H configuration, A-1 and A-2 systems will be accomplished during July. Normal training and flight verification is continuing with sensors in the U-2C.

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b. A contract was let for the procurement of thirteen optical bar cameras and associated ground support equipment during this reporting period.

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[redacted] Delivery of the first camera is expected 1 December 1968 and the last camera in September 1969.

IV. LIFE SUPPORT

a. Training - Two new IDEALIST pilots received partial pressure suit indoctrinations during this period, utilizing the one-man altitude chamber at Detachment G.

b. S-1010 PPA - Three project pilots received S-1010 PPA fittings and altitude chamber indoctrinations during this period. The fittings and chamber runs were successful with pilot acceptance continuing to be favorable. S-1010 flotation tests were completed during this period, in anticipation of the parasail training program. Also, preliminary S-1010 investigations were conducted in attempting to clarify the U-2R air conditioning problem.

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V. GENERAL R&D

a. Drag Reduction Program

Some promising results have been achieved in the wind tunnel test program now underway at the U. S. Navy Post-Graduate School wind tunnel at Monterey, California. As a consequence, the effort has been accelerated with specific emphasis on drag reduction of the U-2R wing.

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[redacted]

c. PROPULSION

(1) High Altitude Engine Relight Program

Late in FY 1968 the High Altitude Engine Relight Program funding was approved by DNRO. This program involves a flight demonstration program of a system for improving the altitude relight envelope of the J75-P-13B engine in the U-2R aircraft, through use of oxygen injection. Proposals have been received from Pratt and Whitney for engine hardware and test

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stand validation of the complete engine relight system. New or modified hardware includes an oxygen injection system, modified burner cans and an adjustable minimum fuel flow setting on the fuel control. A proposal has been received from Lockheed for the modification of one aircraft and flight test demonstration of the system. 25X1D

[redacted]

d. Haze Attenuation Study

A preliminary report of flight test results shows some evidence of contrast improvement using the polarizing filter with black and white photography. However, the improvement is less apparent than had been expected. There is evidence that a significant

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improvement may be expected with color photography. Accordingly, color tests will be performed using a higher acuity lens to determine the degree of improvement that may be expected.

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IDEALIST

OPERATIONAL SUMMARY AND STATUS

(1 April 1968 - 30 June 1968)

I. OVERFLIGHT SUMMARY

a. Three Agency U-2 overflights were flown during the last quarter of FY-68.

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[redacted]

(4) Five additional U-2 missions were alerted and subsequently cancelled. All missions were cancelled due to weather except C-098-C which was due to aircraft malfunction. These missions were duplications of mission C-078-C.

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II. GENERAL

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[redacted]

d. HI ALTITUDE PANORAMIC CAMERA TESTS (PAN)

High altitude PAN tests were completed 30 April, 8 and 10 May. The purpose of these tests was to test and evaluate a new Hycon "6" cone camera similar to the existing tracker camera. 25X1D

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III. AIRCRAFT INCIDENTS

a. On 22 May 1968, Article 383 located at Detachment H, was damaged during landing roll due to loss of tail wheel steering disconnect pin and resultant aircraft ground loop. Aircraft was repaired and functional check flight completed on 29 May 1968. Pilot error was not a factor in incident.

b. On 28 May 1968 Article 385, located at Detachment H, was damaged during ground handling. Cause: Personnel error. The crew prematurely placed sulky under the tail section of the aircraft prior to installation of main gear down lock pin, forcing gear collapse. Aircraft was repaired and functional check flight completed on 12 June 1968.

IV. U-2R DELIVERY STATUS

DELIVERY	ROLLOUT	FIRST FLIGHT	SCHED ACCEPT	ACCEPTED
Aircraft 3	12 Jan.	17 Feb.	1 March	29 April
Aircraft 4	13 Feb.	29 March	1 April	12 June
Aircraft 5	27 March	8 May	1 May	29 May
Aircraft 6	29 April	18 May	1 June	11 June

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